

**ANALYSIS OF THE NATIONAL RESPONSE FOR THE CONTROL OF STI IN  
MADAGASCAR**

**FINAL REPORT OF A JOINT CONSULTATION (MINISANPF, SE/CNLS,  
ONUSIDA, USAID/CDC)**

**OCTOBER 10 – 25, 2005**

Mary L. Kamb, MD, MPH  
Chief, International Activities Unit  
Division of STD Prevention  
Centers for Disease Control and Prevention

Kathleen A. Parker, MPH. CHES  
Consultant  
Global AIDS Program  
Centers for Disease Control and Prevention

**December 2005**

## Table of Contents

Executive Summary.....	
Table of Contents .....	
I. Background .....	
II. Scope of Work for the Consultation .....	
1. Review of existing data and analysis of trends.....	
2. Review of STI prevention and control activities.....	
A. STI Surveillance Activities.....	
<i>Case Reporting</i>	
<i>Sentinel Surveillance</i>	
B. Laboratory Support.....	
C. STI Clinical Services.....	
<i>STI Case Management/Drug Dissemination</i>	
<i>Syphilis Screening in Pregnant Women</i>	
D. Program Management & Quality.....	
E. Provider Training.....	
F. Community Education.....	
G. Leadership and Policy.....	
<i>Policy and Legal Framework</i>	
3. Synergy of interventions led by various partners.....	
4. Proposed monitoring system for the STI program.....	
5. Proposed recommendations.....	

## I. BACKGROUND

Madagascar, an island nation off the coast of southeastern Africa, is currently among the world's poorest nations. With the 2002 gross national income (GNI) per capita estimated at \$US 260, the country is just now emerging from a political crisis that resulted in large declines in the gross domestic product (GDP) and increasing poverty. Madagascar's President Marc Ravalomanana describes the nation's currently most pressing concerns as being economic growth and poverty reduction, and he reports gains can be achieved through effective development and use of natural resources. Still spared the generalized HIV epidemics of its neighbors thus far, such an epidemic would seriously undermine Madagascar's economic future.

Comment [1012Joc1]: Ravalomanana

A former French colony, the Democratic Republic of Madagascar gained independence in 1960. Madagascar's people are made up of 18 different ethnic groups of whom most (55%) are Christian, about 30% practice traditional African religions, and a small minority (5-7%) are Muslim. French remains the official language and spoken among the elite, but Malagasy is more universally spoken. Literacy is low (overall 52%, lower in women) and universal education is a "strategic focus" in the national poverty reduction strategy. With approximately 45% of the population younger than 15 years old and a median age of 17.5 years, reducing population growth is a second strategic focus. A third strategic focus is enhancing transportation and access to services and goods. Madagascar has deceptively rugged and difficult terrain, and most of the island's 18 million people live in remote rural areas. Located in the mountainous center of the island, Madagascar's capital city Antananarivo is a cosmopolitan center reminiscent of southern Europe. However, its five other major provincial cities are not easily accessible except by air or sea. Roads are poor and trains are limited. Much of the island's rural population has no access to clean water or electricity, and many rural towns have no primary school or health center.

Although tremendous progress has been achieved in recent years, Madagascar's health statistics remain poor. In 2003, life expectancy at birth was estimated at 54 years. The 2003 mortality rates reported for infants < 1 year (78 per 1000 live births), antenatal mothers (660 per 100,000 live births), and children under 5 years (126 per 1000 children) had dropped steeply from rates a decade earlier, but are still far from global goals. An estimated half of Madagascar's children under 5 years suffer from some form of malnutrition. Infectious diseases remain major health threats, including vector-borne diseases such as malaria and plague, waterborne diseases such as bacterial or protozoal mediated diarrhea, typhoid, hepatitis, and sexually transmitted infections (STI) such as syphilis (estimated at more than 8% overall and up to 17% of pregnant women in some provinces). Despite high rates of genital ulcer disease (GUD), HIV has thus far relatively spared this island nation, with prevalence in 15-45 year olds estimated at 1.7% in 2003 (UNAIDS). The limited HIV epidemic has been speculated as related to geographic and/or political isolation and to the fact that the vast majority of males are circumcised in infancy. Nonetheless, through 2003 an estimated 140,000 persons were living with HIV and 7500 HIV-related deaths had occurred (UNAIDS).

Until recently the country had not been much concerned with either its STI situation or HIV. However, over the past two years President Ravalomanana has publicly warned the population about HIV/AIDS and has developed a cabinet level HIV position (*Secrétaire Exécutif, Comité National de Lutte contre le SIDA, SE/CNLS*). Most STI/HIV related support to Madagascar to date has come through a strong USAID Mission, but in 2002 the nation received substantial Global Fund monies for HIV and since 2004 World Bank Multisectoral AIDS Program (MAP) funds have also become available. Several other bilateral donors (France, Germany, Japan) as well as UN agencies (UNICEF, WHO, ILO, UNAIDS) in addition to the United States are also active in supporting HIV/AIDS control efforts. Many effective local and international non-governmental organizations work with the private as well as public sectors, including some strong faith-based organizations (e.g., Adventist Development and Relief Agency [ADRA]; Catholic Relief Services [CRS]).

**Comment [1012Joc2]:** Comité National

**Comment [1012Joc3]:** as well as UN agencies (UNICEF, WHO, ILO, UNAIDS...)

## II. SCOPE OF WORK FOR THE CONSULTATION

In response to the President's growing concern about HIV/AIDS and the high prevalence of other STI, the SE/CNLS and its technical partners identified an urgent need to analyze the national response to the prevention and control of STI as the basis for "readjusting" or reorienting its STI strategy. To provide technical assistance to this analysis, the U.S. Embassy/USAID invited a team from DHHS/CDC to work with colleagues from the SE/CNLS, the Ministry of Health (former *Direction-Generale de la lutte contre le SIDA, DGLS* and now called Programme IST/SIDA) and UNAIDS as part of a Joint Consultation Team on this issue. Terms of Reference for the team were developed by the CNLS in consultation with USAID and were vetted with CDC consultants prior to the visit (Attachment A).

**Comment [1012Joc4]:** former Direction...

**Comment [1012Joc5]:** and now called Programme IST/SIDA

The Terms of Reference for the team included completion of the following six tasks:

- Conduct a review of existing data and analysis of trends
- Study different aspects of the STI prevention and control program emphasizing coverage and effectiveness
- Study the synergy of the interventions being led by various partners
- Propose a monitoring system for the STI program that will be effective and sustainable
- Propose recommendations including program priorities in light of achievements to date, lessons learned and best practices in other countries and scientific evidence from recent operational studies
- Support the government in developing next steps

The Joint Consultation Team met with key informants from central, district, and local governments, private sector providers, management and technical staff from international non-governmental organizations (NGOs), bilateral and multi-lateral agencies, and occasional others (Attachment B). The Team also visited public and private health care facilities providing STI or related services, and agencies and offices involved in the dissemination of essential STI drugs. Since the time allocated for the consultancy was

only 17 days, the consultation focused on two provinces, Antananarivo and Toamasina and included visits to urban and rural health facilities (Attachment C).

This report, prepared by the DHHS/CDC consultants, describes the Consultation Team's findings and recommendations, and also makes recommendations to the U.S. Embassy and USAID/Madagascar concerning their follow-up support to the SE/CNLS and the Ministry of Health. Organization of the report follows each of the tasks in the scope of work. A second report in French will be prepared by the Ministry of Health and UNAIDS colleagues. The latter will contain the same basic findings, recommendations and next steps and will be addressed for action to the SE/CNLS. The contents of the reports up to and including recommendations to the SE/CNLS were developed by the entire Joint Consultation Team and were presented for discussion to technical partners at a mini-workshop held on October 21 at the SE/CNLS. Following the workshop debriefing sessions were held by the entire Team with the SE/CNLS (October 24). In addition, the DHHS/CDC consultants met with the U.S. Ambassador (October 24) and the USAID Health/Population/Nutrition (HPN) Officer (October 25) and provided some additional ideas on how the USG might support Madagascar in STI control and prevention.

### ***Task 1: Review of Existing Data and Analysis of Trends***

The Government of Madagascar (GOM), with support from a number of donors, has collected considerable data on STI and HIV over the past five years. Available data include:

- Trend data from HIV/syphilis sentinel surveillance (HIV/SSS) in 1995 and 2005 at 6 urban sites (3 sentinel groups)
- A large 2003 population-based HIV and syphilis seroprevalence survey in pregnant women, linked with some HIV/STI risk behaviors (*Etude Combinee des seroprevalences de l'infection of VIH et de la syphilis chez les femmes encientes a Madagascar. May- June 2003. DSEC/DGLS LNR*)
- Several demographic and Health Surveys (DHS), the most recent one (2003-2004) including syphilis testing
- Several behavioral and other risk factor studies, such as a recent behavioral surveillance in 5 sentinel groups as part of Second Generation Surveillance (FHI, 2005); the Priorities for Local AIDS Control Efforts (PLACE, MEASURE, 2004); Tracking Progress Continuously (TRAC, PSI ongoing), and others;
- STI service data from Monthly Activity Reports (*Rapport Mensuel d'Activites*) of health facilities (*Centres de Sante de Base, CSB I and CSB II*; latter is larger and staff includes a physician) reporting "genital discharge" and "genital ulcer disease";

- 2000 evaluation of PI6/PI7 indicators from WHO related to the quality of STI treatment services in public facilities.

In addition, a number of research studies have been conducted through a long-term collaboration between the GOM and the University of North Carolina (UNC) known locally as UNC-MAD. These studies focus on STI, behavioral risk factors and health services delivery among commercial sex workers and other high risk groups. *Institut Pasteur* (IP) has also collaborated with both the GOM and UNC on STI-related research.

Synthesis of existing data suggests a complex, concentrated HIV epidemic that is likely being enhanced by the high STI (and particularly GUD) prevalence, and with a variety of STI-HIV interactions at work. The HIV/syphilis sentinel surveillance data (1995 and 2005) suggests that syphilis prevalence has decreased substantially over the past decade in the 6 provincial cities with corresponding data points. This was observed in all three sentinel groups studied: commercial sex workers, STI clients, and antenatal women. Nonetheless, syphilis prevalence remains extraordinarily high in all groups. For example, considering only data from the six cities with data from two time points: the 2005 survey found crude syphilis prevalence to be 6.7% among antenatal women (range, 2.7 to 9.5%); 5.7% in STI patients (range, 4.0 to 14.3%); and 16.6% in sex workers (range, 6.9 to 39.3%) (Attachment D). The combined 6-city HIV prevalence in these same groups was 0.14%, 0.54%, and 1.4% respectively. Although HIV numbers were small and trends not statistically significant at  $p < 0.05$ , some interesting tendencies were observed. The highest HIV rates tended to be in provinces that historically have had the highest syphilis rates. Also, while overall syphilis prevalence had dropped by about half since 1995 in the 6 cities, HIV prevalence remained about the same in antenatal women, had doubled in STI patients, and had quadrupled in sex workers during that time period. These data suggest an HIV epidemic still concentrated in high risk groups, but rapidly rising and likely fueled by syphilis (other STI data were not collected in the sentinel surveillance). In other countries, concentrated HIV outbreaks in high risk “*bridging populations*” such as sex workers and mobile men have led to generalized epidemics over time.

The large 2003 HIV and syphilis prevalence survey of 9,623 antenatal women in 208 randomly sampled sites found a somewhat more alarming trend. A total of 104 (1.1%) HIV cases were found in 69 (33%) districts spanning the nation, many of these quite remote locales. Crude (all studied) syphilis prevalence was remarkably high (8.2%), and HIV was 1.85 times more likely among syphilis infected women ( $p < .03$ ) – this finding largely driven by two provinces. A map review of cases found some “hot spots” in smaller cities, often at port cities and smaller towns at “cross roads,” suggesting that HIV infections in antenatal women are likely related to mobile men.

A review of the 2003-2004 DHS results indicated that STI are poorly understood by most of the population and particularly by rural residents. STI are perceived as a much lower public health priority than other diseases, including HIV (although it is much rarer than other STI). Sexual debut is not particularly young (>15 years for both women and men); however, reported condom use is quite low, particularly among younger men and women. On the other hand, male circumcision during infancy is common (range, 95 – 99% of population in 6 major provinces). The 2003 DHS reported overall syphilis prevalence

(all ages) at 3.8% with much higher rates in rural areas and in certain provinces (Toamasina, Toliary, Antsiranana). The provinces with the highest syphilis prevalences tended to have lower coverage of other health services, such as childhood immunization, access to clean water, and electricity – suggesting that syphilis prevalence is more of function of poor public health infrastructure than of riskier behaviors.

Review of clinical service data from multiple sources indicated that STI are among the most common medical conditions seen in public (placed 5<sup>th</sup>) or private (placed 4<sup>th</sup>) clinics. In general, STI services were well integrated in primary care in both the public and private sectors. Data suggested that service provision in the private sector was overall better than in the public sector; however, many private sector physicians were not satisfied with the use of syndromic case management (SCM) and tended to augment this with additional drugs and laboratory tests that added cost but no additional benefits for patients. Despite integration of STI services into primary care, very few men accessed the services, preferring to seek care at pharmacies, groceries, relatives or (in the case of rural men) with itinerant drug sellers. Particularly noteworthy is the fairly high access to antenatal care in Madagascar, with 80% of pregnant women reporting at least one antenatal visit and 40% reporting all 4 visits (DHS, 2003). However, many of the more than 2800 health facilities lack basics such as electricity and running water, and only 24% of women had blood drawn at any of their antenatal clinic visits (DHS, 2003).

Many special research studies have been conducted, particularly among female sex workers (FSW). These reports suggest FSW are often young and tend to come to cities from rural areas. Women tend to have high numbers of partners (5-10/week), practice a number of types of sex, including oral and anal as well as vaginal sex, and that condom use is variable as sex is cheaper without a condom. STI rates are very high among FSW. For example, one cross-sectional study specifically addressing STI found that > 60% of women tested had at least one curable STI. In addition, there seems to be a group of “sex traders” who are distinct from sex workers and who trade goods for sex only under economic hardship. These women are less knowledgeable and less likely to protect themselves than more “official” sex workers. While the research studies have provided important information on women who sell or trade sex, program services are quite limited in both the public and private sectors (e.g., Toamasina has an estimated 20,000 sex workers, of whom 500 participate in research studies). In many cities sex workers are asked to “register” and carry a card that indicates when she was last checked for STD.

Despite a good amount of data, fairly little is known about certain high risk populations through whom “bridging” of STD/HIV to the general public is likely to occur, including clients of sex workers, various mobile men (e.g., truckers, miners, sailors) or men who have sex with men (reported in several urban areas). Service coverage data are also largely unavailable, and STI control interventions are generally limited. The team found no data on pregnancy, fetal loss or induced abortions among commercial sex workers. Men who have sex with men (MSM) are reported in the larger cities including Tana and Antsiranana, and are recognized as having high rates of HIV and STD (e.g., data from SISAL clinic). However, total numbers of MSM in these communities seems to be small. No information was available on how tourism is linked to MSM, and this may be an area where further studies are warranted.

These data are also summarized in the slides from the final Mini-workshop (Attachment E).

## ***Task 2: Review of STI Prevention and Control Activities***

Program experts have identified that effective, comprehensive STI control programs include multiple components ([www.cdc.gov/std/program](http://www.cdc.gov/std/program)). Guidelines for program operations have been developed for the United States (see website). For this assessment, the Joint Consultation Team focused on seven of these: Surveillance, Laboratory Support, STI Clinical Services, Program Management and Quality, Provider Training and Supervision, Community Education, and Leadership and Advocacy.

### **A. STI Surveillance Activities**

Madagascar's STI surveillance is currently based on national case reporting to DGLS in the public sector (as part of general disease surveillance) and occasional sentinel syphilis surveillance linked to HIV surveillance.

#### **Case Reporting**

Since 1995, the DGLS STI/HIV Treatment Section has collected national case report data on two syndromic conditions, genital ulcer disease and genital discharge. This is done as part of the monthly disease surveillance conducted by government health facilities using the official reporting form (*Rapport Mensuel d'Activites*) of the national Health Statistics Service or *Service de Statistiques Sanitaires, SSS*. The STI information is provided as monthly summary data, not stratified by sex. Per staff accounts, some private health facilities (e.g., OSTIE, TOP Reseau clinics, SISAL) also complete the monthly summary forms.

This case reporting system consists of individual health facilities completing the data forms and providing these to the next level up (e.g., CSBs report to Districts, Districts report to Provinces, Provinces to Central level). At the DGLS, the STI/HIV Treatment Section summarizes data on a monthly basis and provides annual reports to higher levels of government. The two STI syndromes are reported as a prevalence rate using all-age population data. No data are provided back to the lower levels or local level. Staff were unable to comment on if and how these data are used for program monitoring and evaluation purposes.

#### **Sentinel Surveillance**

After a 10 year hiatus, the National Reference Laboratory (*Laboratoire National de Reference, LNR*) has restarted the process of annual HIV and syphilis sentinel surveillance (uses VDRL and confirmatory FTA). Prior to the sentinel surveillance activity conducted this year (2005), the most recent round of surveillance was in 1995. As described earlier, data are currently collected from government clinics on three groups of varying HIV/STI risk: antenatal women, STI patients seen in primary care (male and female), and commercial sex workers (female). Eight sentinel sites (primarily large urban centers) participated in the 1995 sentinel surveillance, whereas 13 sites participated

in 2005 (six cities participated in both). The anticipated 2006 sentinel surveillance is anticipated to involve even more sites (still to be determined) including some in rural areas. Surveillance activities are summarized in the Trip Report dated October 25, 2005 prepared by laboratory consultant Kari Brattegaard and submitted to the Association of Public Health Laboratories (APHL) and USAID/Madagascar (Attachment F).

No other government-supported surveillance activities (including for congenital syphilis or cervical cancer) were identified on this visit. However, some additional data are available from ongoing research studies. For example, at the time of this visit, the *Institut Pasteur* was conducting gonorrhea susceptibility studies involving participants who had genital discharge diagnosed at a few clinical sites in Antananarivo city. Although information on all drugs remained incomplete, *Institut Pasteur* was able to provide preliminary data to the team suggesting that about 7% of gonorrhea was fluoroquinolone resistant (MICs not yet available). In addition, UNC noted their plans to repeat a study on the etiology of genital ulcer disease (perhaps with CDC STI Laboratory) to update its 1997 data which found *H. ducreyi* to be the most common etiology (31.3% of 196 samples tested) followed by *T. pallidum* (26.2%) and herpes simplex virus (7.7%).

## B. Laboratory Support

Although a number of hospital and research facilities have the capacity to conduct STI testing, no government-supported STI laboratory program currently exists. The Joint Consultation Team visited at least one candidate laboratory, the Laboratoire National de Reference VIH/SIDA (LNR), located in Antananarivo at the HJRA Hopital Joseph Ravoahangy Andrianavalona. In their interviews with the Joint Consultation Team, the leaders of LNR (which has responsibility for the HIV laboratory system) agreed that their laboratory probably also had responsibility for syphilis testing, but they were not sure. In fact, the LNR currently has the trained personnel and reagents to conduct both treponemal and non-treponemal tests, but only provides these services to the main hospital in Antananarivo and during HIV sentinel surveillance or other special data collection activities. The laboratory's leaders were unable (or unwilling) to imagine how their laboratory might be used to control quality of a national syphilis program. They were also unclear about when syphilis screening was done (e.g., not sure if in all or only some antenatal women), and exactly what syphilis tests used (although the technicians were able to describe this). The LNR is currently developing Procedures Manuals and quality control (QC) systems for HIV testing (Attachment F), but has not undertaken a similar effort for syphilis testing.

Comment [1012Joc6]: HJRA  
Hopital Joseph Ravoahangy  
Andrianavalona

The team visited a number of smaller laboratories, none of which was part of a quality control system (with the possible exception of *Institut Pasteur*). One visit was to the District Hospital in Toamasina city, where 3 technicians were interviewed (Director unavailable as was traveling to Tana). The technicians reported that they make up their own VDRL solutions using reagents donated by *Institut Pasteur* sometime before 1999. They noted they have "a huge stock" so they have not needed to order any, ever. In any case, there is no system to reorder it (syphilis tests are not part of the essential reagent form, so the tests must be written in under "other.") The staff shared the laboratory personnel log recording monthly results: between January and September 2005 they had

13.9% VDRL positives among > 5400 antenatal women (monthly rate varied from 11 to 19%). No confirmatory tests were conducted, but the technicians reported they are able to provide titers (low, medium, or high) although none were recorded in the log. For male and female patients with genital ulcers, they found 61% VDRL positivity during the same time period (monthly rate 49 to 74%). Since 1999, they have participated in no laboratory monitoring or quality assurance checks. They reported receiving training by various vertical programs (e.g., malaria) but cannot recall an STI training in the past. However, an older technician recalled an STI training course supported by GTZ in 1993. They noted that since the government acceptance of SCM, training is probably no longer required. Procedure books (e.g., for preparing VDRL reagents) reportedly existed but never materialized. The technicians reported that this laboratory does not do HIV tests because they are unable to get reagents through any vertical program. They noted that in the past they collaborated with UNC-MAD to conduct STI and HIV tests for the Toamasina project, but this collaboration stopped in 2003 when the research site developed its own laboratory. This was the only district level facility observed by the team, and it is not clear how representative it is of other districts. However, discussion with Kari Brattegaard suggested that, based on results of the 2005 sentinel surveillance quality control, this is not the most poorly functioning laboratory of its type.

The team observed several small, facility-based laboratories that did RPR or VDRL testing at private clinics including TOP Reseau clinics, OSTIE, SISAL, and AMCM. All were clean and had technicians who reported recent training in a variety of areas including STI. Some, but not all, conducted confirmatory syphilis tests. Some had hand written procedures manuals. None was part of any quality control program. We also observed several CSB-IIs in rural and urban settings. Only one (Isotry in Antananarivo city) had any laboratory capacity whatsoever, and Isotry sent serum samples elsewhere in the city for syphilis testing. Most CSBs we observed had no electricity or running water, and none had capacity to draw blood or conduct any other blood tests.

### C. STI Clinical Services

#### STI Case Management/Drug Dissemination

Over the past decade the government of Madagascar has been working to strengthen the control of STI. Efforts have been characterized by strong involvement of both the public and private sectors. Following an algorithm validation exercise in 1997 the government adopted the SCM approach for the diagnosis and treatment of STI. Beginning in 2000 STI case management was integrated into all public and private (NGO) primary health care services. Following two national conferences in 2001 and 2002 on genital discharge and genital ulcers respectively, pre-packaged treatment kits (Cura7 and GeniCure) were developed to treat these common syndromes, for distribution at subsidized prices primarily in the private sector (NGOs, private physicians, pharmacists, TOP Reseau franchises) using a social marketing approach. Cura7 is sold for 1000Ar (about \$.50) at TOP Reseau clinics and pharmacies and 700Ar in public clinics. Between 2000-2002 small revisions were made to the SCM algorithms and standard training materials were prepared. A colorful table top flipchart to guide the SCM diagnosis and treatment by providers was developed by the MOH and its partners. During 2003-2004 1775 private sector providers received refresher training in SCM from AMMS/PSI/ITEM to introduce

the flipchart. Shortly thereafter 2500 providers in the public sector were trained by MINSANPF/INSPC/CRESAN in a 2-day training session using the same materials.

Distribution of effective drugs has been problematic. The first line drugs recommended in the national STI treatment algorithms are often unavailable and other needed commodities are also scarce. For example, penicillin may be available for syphilis treatment, but syringes/needles and gloves are often not. Madagascar has attempted to remedy this through the procurement and dissemination of the above-mentioned pre-packaged STD kits that contain effective drugs, condoms, and referral cards for sex partners. The Cura7 kit for genital discharge contains a dose of ciprofloxacin for treatment of gonorrhea and 7 days worth of doxycycline (14 tablets) for treatment of chlamydia. The GeniCure kit contains sufficient ciprofloxacin to treat chancroid (6 tablets) and a ready-to-prepare syringe (with powdered benzathine penicillin G) to allow the provider to treat the client on the spot.

The pre-packaged kits were initially made available through a USAID-supported program implemented by Population Services International (PSI). Using a social marketing scheme, private sector clinics are enrolled into a program (TOP Reseau) that supported similar kits for contraception and treatment of malaria. At the time of this review, PSI had created a network of 123 franchised reproductive and other private health clinics of 183 service providers in five urban sites. All clinics provide treatment for STI using Cura7 and GeniCure. The success of the program in the private sector led the public sector to become interested in the kits. In addition to the PSI Top Reseau network, several other health facilities operated by NGOs (e.g., SISAL) also see STI patients and have begun offering the pre-packaged treatment kits at similarly discounted rates.

**Comment [1012Joc7]:** Top Reseau provides counseling on treatment of STIs and reproductive health issues in general. PSI social marketing program also includes malaria treatment tablets for kids under 5.

Through World Bank funding, in November 2004 Cura7 became available for the public sector from Salama (non-profit organization that procures and distributes drugs and consumables to public and private non-profit hospitals and health centers nationwide, based on annual orders submitted by these facilities, through the districts). To promote use of the kits, an initial free stock of 85 kits per CSB was distributed after the trainings.

In July 2005, 300,000 additional kits (or approximately 20 per CSB) were made available to the public sector with World Bank funds. Despite this, none of the 7 CSB's (public clinics) visited by the Joint Consultation Team had a supply of Cura7 kits. In one situation the kits were piled up at the district pharmaceutical warehouse (PhaGeDis). Although their expiration date was less than 3 months away they had not been prioritized for delivery because the director had more pressing problems and now access was a major issue with oncoming poor weather expected. In another situation, the district warehouse had not understood that the first tranche of kits was to be provided free of charge to the CSB. The director was adamant that she could not provide kits without first receiving payment from the CSB, and agreed this was difficult because the kits were not included as part of the order form (write in request was required). In a third situation, the district warehouse had distributed all kits and had no more to deliver, but the staff claimed to be unaware that more kits could be ordered from Salama. Without access to the STI kits, most CSB's visited by the team were prescribing generic drugs on the essential drug list, but because of drug shortages were often using 3<sup>rd</sup> or 4<sup>th</sup> line

**Comment [1012Joc8]:** In the rural CSB of Anjiroro, there was a stock out of Cura7 since the initial free 85 kits have been used.

alternatives, and sometimes non-recommended regimens, for treatment of genital discharge.

To date no GeniCure has yet been made available in the public sector, but tender procedures are underway and the product reportedly will be available in about four months (March 2006). In spite of assurances to the contrary, neither of these treatment kits is currently on the published Essential Drug List of the Ministry of Health and thus are not included on the ordering forms for Salama. This has led to a number of dilemmas for promotion and kit ordering and distribution through the district health structures.

The operations of STI services in the public sector CSB vary considerably due to stock-outs of treatment kits, effective drugs and essential consumables (e.g., ciprofloxacin, syringes and gloves were unavailable in every public facility visited); lack of condoms (unclear why they were lacking since they are available for family planning, although apparently STI and family planning programs cannot share commodities); no requirement for condom use demonstrations with patients, lack of specific instructions to patients about proper taking of the drugs, no observation of the single dose of ciprofloxacin treatment in Cura7, inappropriate use of alternative drugs (e.g., wide use of amoxicillin as alternative treatment for gonorrhea despite numerous anecdotal reports of amoxicillin resistance) and little attention to partner notification using the color-coded cards provided in the kits. At least in the public sector there is presently no way for sex partners presenting for treatment to be counted for the Monthly Activities Report.

The Joint Consultation Team also observed that the algorithms promoted by the SCM flipcharts were not always correctly interpreted by health care providers. Some problem with the algorithm was identified at almost every setting, whether public or private. In many cases this was related to misunderstanding of the vaginal discharge algorithm, which is admittedly complex. This could lead to unnecessary costs for the individual but, given the fact that at least one full dose of gonorrhea and chlamydia treatment was nearly always provided, probably did not have large consequences to the community.

More disconcerting was the fact that GUD was almost always treated with penicillin alone. Providers had various reasons for this: Many private providers felt sure they could accurately detect the etiologic agent of GUD (and tended to diagnose everything as being related to syphilis). Most public providers had no ciprofloxacin available to treat chancroid and did not consider use of other drugs (perhaps a problem with the training). Some providers were clearly confused with the flipchart.

Chancroid is arguably the STI most highly associated with HIV; and its current role in GUD in Madagascar is highly debated. If, as most providers seem to believe, it is increasingly rare, GUD treatment algorithms could possibly be modified. Without the need to include ciprofloxacin, kits/treatment would be much cheaper. As noted, most Malagasy clinicians believe chancroid to be an unusual cause of GUD. Some technical experts have postulated that chancroid in Madagascar is probably rare because of high male circumcision rates. However, it is important to keep in mind the results of the 1997 GUD etiology study that found *H. ducreyi* to be the most commonly identified etiologic agent for GUD (33%, another 31% had no etiology identified). This, coupled with the

fact that there has been no grand change in GUD control programs recently, but substantial evidence for largely inadequate drug coverage for chancroid in GUD regimens, we felt we cannot rule out the possibility that chancroid is still an important STI in Madagascar. As noted, a GUD etiology study is planned for the near future.

While STI services are generally available in both the private and public sectors, based on our review of existing data, site visits and discussions with providers, some gaps remain. Men tend to seek STI services outside the public and private clinical settings (if at all). In addition, STI/HIV clinical and preventive services for high risk groups (“bridging populations”) such as sex workers, truckers, military and other mobile male populations are extremely underserved at the present time. However, in addition to UNC-MAD, SISAL, Isotry Health Center (Tana) and TOP Reseau provide services to some sex workers, suggesting the possibility that expanded service networks can be developed. Mobile men and clients of sex workers currently have no special service options outside of primary care centers or private clinics. Treatment guidelines for following sex workers every three months were adopted in 2001 and could be more widely implemented if more service sites were established.

Condoms were not always provided at the public sector clinics we observed, although could be purchased at most private clinic settings. With World Bank funding 15 million condoms will be soon be available for “promotional distribution” free of charge through the public sector facilities.

Some concerns were raised that the SCM approach, and particularly the use of the Cura7 and GeniCure kits, may promote “drug resistance.” Currently, the pre-packaged treatment kits must be provided by a physician or trained primary provider, either during a clinic visit or through a prescription filled by the patient at a pharmacy that has agreed to stock the product. A review of the training documentation indicated that the national SCM materials were careful to educate providers about this, although did not specifically request directly observed therapy of the single-dose ciprofloxacin (Cura7) or first dose of GeniCure. The training documentation clearly indicated that kits should be used by one person, although the training does not specifically instruct providers to warn patients not to share the drugs in the kits. On the other hand, we observed that without treatment kits (or ciprofloxacin) currently available, many public and private providers are now resorting to much less desirable genital discharge and GUD treatment options that might promote antimicrobial resistance.

Wide availability and correct use of effective drugs that are physician provided should diminish likelihood of antimicrobial resistance. However, even with additional precautions such as provision of directly observed therapy [DOT] using single dosed regimens and special instructions not to share kits with partners, problems could occur. Ciprofloxacin is expensive and is useful for non-STI related illnesses. If providers realize that the pre-packaged kits contain ciprofloxacin (subsidized and thus much cheaper than usual), the kits may be inappropriately used for other non-STI illnesses. It will be important for DGLS to develop strategies to ensure providers do not resort to this. In addition, CSB providers must have access to generic ciprofloxacin to use for other illnesses (they currently do not) or they will be inclined to misuse the kits. Patient and

provider education should constantly reinforce the proper taking of these medications, and quality assurance monitoring and ongoing evaluations on use of the kits will be important to address these issues. Of the informants we interviewed, few of the people expressing concern about resistance were able to describe the specific issues that made them cautious about the kits. This suggests there is some generalized concern and possibly confusion in this area. Educational seminars/workshops for donors as well as government officials may be useful to increase understanding and acceptance, and also allow an open forum for question and discussion.

#### *Syphilis Screening in Pregnant Women*

In theory, Madagascar has a policy of routine syphilis screening for pregnant women. However, our DGLS colleagues estimated that less than a quarter of women are now screened. In spite of fairly high access to prenatal care services reported in the 2003 DHS, only 25% of women had blood drawn (presumably for syphilis testing) during a prenatal visit. Currently, little or no testing is done at the CSB I or II levels, rather pregnant women are referred to a district, regional or provincial hospitals or to private clinics. Procurement of RPR testing kits is limited to these facilities.

The DHS estimates national syphilis prevalence at more than 8% among pregnant women (and as high as 17% in some provinces), indicating that Madagascar's syphilis prevalence is among the highest in the world. Congenital syphilis screening is relatively inexpensive compared with other preventive measures, and effective treatment (benzathine penicillin) is widely available and affordable. Cost-benefit studies of antenatal syphilis screening from other countries with lower syphilis prevalence (e.g., Haiti, Tanzania) suggest syphilis screening can be highly cost-effective, with cost per DALY averted in the range of childhood vaccination (!) The public health leaders interviewed by the Joint Consultative Team were clearly interested in increasing congenital syphilis screening and treatment, but were largely unaware of the technical details that must be addressed: Foremost, timing of syphilis screening is critical.

To be effective, screening and treatment of syphilis-infected women should occur at or before 24 weeks gestation to ensure true reductions in fetal loss. (Early HIV screening is also preferable to reduce intrauterine transmission, which represents about a third of neonatal HIV infections. But screening for syphilis close to delivery differs from HIV in that late syphilis screening is unlikely to provide much public health benefit, while late HIV screening and treatment may still prevent infections from the delivery or post-partum periods). Programs need to be aware that late syphilis screening (after 32-34 weeks) will seem very productive in terms of program numbers, but have little real effect on adverse pregnancy outcomes. In addition, providers will tend to defer treatment until confirmatory test results return, but difficult terrain and limited access will lead some women to be identified but not treated. Use of rapid tests that allow testing and treatment on the same visit is preferable. However, high general population prevalence of syphilis makes treponemal tests less desirable and currently the only rapid test marketed is a treponemal test. Reliance on this test will lead to some over treatment. Madagascar seems like an ideal location for pilot testing some of the newer rapid, point of care non-treponemal tests.

Several opportunities exist to increase screening coverage. The government is poised to create 200 Prevention of Mother to Child Transmission (PMTCT) sites for HIV prevention. It is currently unclear if and how syphilis screening and treatment will be implemented as part of the program, and this should be immediately explored. These PMTCT programs could provide an opportunity to prevent congenital syphilis in addition to HIV infections, and at a fraction of the cost. Roll Back Malaria and Safe Motherhood programs are also ongoing in Madagascar but syphilis screening has apparently not yet been incorporated into these.

WHO is currently promoting congenital syphilis elimination activities worldwide, and WHO/Madagascar reports it will be supporting the GOM in planning pilot studies to increase screening and treatment of pregnant women as part of a Safe Motherhood “package.” It is hoped that this effort can start off by promoting screening in some of the more high prevalence provinces (e.g., Toamasina, Toliary) and will be able to take advantage of existing public health programs and infrastructure supported by other donors such as USAID.

#### D. Program Management and Quality

While the DGLS has made some significant accomplishments in developing an STI control program (e.g., adoption of SCM, provision of pre-packaged treatment kits in the public and private sectors, production and distribution of flipcharts) many holes remain. The existing STI program is fragmented, lacks enough critical management personnel, and has not yet developed systems to ensure quality programs. The program fragmentation (antenatal syphilis screening separated from STD control) has been described earlier, and is an area that should be addressed as quickly as possible.

An effective STI control program has many different components that need to be planned, managed, coordinated, monitored, and evaluated. Currently very few senior managers or experienced technicians in the DGLS are dedicated full-time to STI control. The resources for STI control that are available (SCM algorithms, drugs, trained personnel, technical and donor support) need to be managed in a coherent manner in order to be maximally effective. Developing a national STI control strategy, as planned, will help move this along and hopefully will also identify the needed staff to carry out the program. In particular, program monitoring strategies need to be developed that collect simple data on program progress and provide appropriate feedback to programs to allow needed changes. Although multiple data sources related to disease epidemiology, behavioral risk factors and health services delivery exist in Madagascar (many described earlier in this report), no coherent monitoring system is in use. It is particularly concerning that outside the private system of TOP Reseau clinics, no information is provided back to programs at any level (e.g., no central feedback to provinces, no provincial feedback to districts, or district feedback to CSBs).

Both public and private sector agencies have already recognized the need to establish systems to monitor quality of STI case management. However, key program elements are not agreed upon and no standard supervisory checklist for providers of STI case management exists at the present time. Sante-Net, PSI and the MOH/DGLS have each

developed their own form for the service sites for which they are responsible. A proposal has been submitted by the DGLS to the SE/CNLS for the conduct of supervisory visits to 6 high volume STI service sites in each of 12 districts. If implemented, this would be the first systematic look at the quality of services provided since the 2000 PI6 and PI7 evaluation and the 2004 trainings with the SCM flipchart.

No plan for evaluating program impact currently exists other than that for monitoring and evaluating achievement of the relevant UNGASS indicators and the “sub-indicators” by 2006. The latter include counseling related to condom use and partner notification, syphilis prevalence among pregnant women, STI patients and commercial sex workers, care-seeking behaviors for STI, and extent of provider training. With the current effort to strengthen the existing STI strategy by focusing on three primary overall strategies, more detailed goals, objectives and indicators can be developed as milestones over time to complement the broader UNGASS indicators. It is unlikely that this can be accomplished by 2006, and promoting a full PI-6/ PI-7 evaluation before these processes can be put into place would be unfortunate because any survey results would provide a distorted picture of national progress (and would also waste of resources). However, a 2007 survey seems justifiable.

#### E. Provider Training and Supervision

Ongoing supervision and refresher sessions are provided to the network of private sector TOP Reseau providers. Thus far, no regular system for such activities seems to be ongoing in the public sector. For example, 2500 public sector providers were trained in 2004 to use the SCM flipchart, but little is known about the quality of care being provided since that training. The 2004 training lasted only two days, suggesting the need for follow-up supervision on site to document maintenance of skills and identify problems related to performance and service delivery. As noted above, the DGLS has proposed a pilot test of such a system but has not yet received any support or feedback on this proposal.

SCM currently is not part of the curricula for medical and nursing students and thus the theory is not well understood and the practice not well accepted or implemented among private clinicians.

#### F. Community Education

Many mass media and interpersonal communications programs are reportedly promoting sexual risk reduction among the general population, youth and other sub-populations; however, most of these seem to be focused on HIV rather than general STI. Peer educators and community “*animateurs*” are part of various NGO programs throughout the country and could possibly be used to promote special issues such as antenatal screening or partner therapy. Radio is a popular medium with high coverage throughout the country, but it is not clear how effectively this is being used for STI prevention. STI and HIV education is included in the school curricula and on school examinations.

Despite all these, government leaders and the general population do not fully appreciate the magnitude of the STI problem, both as a public health priority in itself and as an important prevention strategy for the spread of HIV. The links between STI and important adverse outcomes such as pregnancy loss and stillbirth, infertility, cancer, and enhanced susceptibility to and transmission of HIV are still poorly understood by the general public and even by many health care providers and public health officials. Little attention is paid to risk for other STI transmission or to the importance of treating sex partners. In the 2003 DHS, only a very low proportion of the population could name any STI or sign of STI, even among those who were syphilis infected. The team saw no evidence of any media or community education program related to syphilis or other curable STI.

#### G. Leadership & Advocacy

Despite high prevalence of STIs and their adverse consequences, STI are still not considered to be an important public health problem in Madagascar. Leadership and advocacy for STI prevention and control is still lacking at this time. In fact, until the recent SE/CNLS discussions no important political (or even public health) leader had come forward to promote STI control programs. Any existing national STI control strategy has been quite passive.

The existing STI prevention/control program is part of the DGLS HIV/STD unit which allows it some visibility, albeit as the “second-class sister”, in relation to the higher-profile HIV/AIDS activities. As noted earlier, syphilis screening among antenatal women is not part of the DGLS STI/HIV program, but is located in the MCH Division where it has not been promoted successfully or effectively. It is probably worth repeating that integration, or at the very least very close coordination and communication, of these two STD programs will be critical to ensure effective STI control.

In addition, the general ignorance of the STI problem as an important public health priority in Madagascar should be addressed by leaders, especially in light of the high rate of syphilis among pregnant women which affects the health of mothers, babies and families.

#### Policy/Legal Framework

Several progressive policies or laws exist around STI control. Both private and public sectors are recognized by the SE/CNLS as important sources of care. Use of the two treatment kits has been embraced by the government (theoretically approved for the Essential Drug List adopted under the Bamako Initiative) and by providers of care, although some debate exists about the fees charged for these medications as well as for RPR testing of pregnant women. A supportive policy environment exists to allow provision of services to youth 15-24 years of age. The legal status of commercial sex work is not entirely clear. Although prostitution is supposedly illegal for young women 15 years of age and younger, the practice is otherwise widely accepted and, by report, women are seldom detained by authorities. No prohibitive laws around condom use exist. The policies and laws around distribution and use of health cards by sex workers for so-called monthly STI check-ups are unclear; the effect of these cards on the sex

workers, their clients, health care providers and public health and safety is an area of future research and discussion.

***Task 3: Describe Current Interventions by Technical Partners and their Synergy***

Considerable support for STI control exists among donors, as evidenced by the large donor turnout and animated discussion at both the initial “introduction” meeting with the Joint Consultation Team and again at the final mini-workshop on October 21. In addition to development of the Consultation Team, many past collaborative achievements have been made, such as:

- Extensive support to GOM in developing and validation of national SCM algorithms consistent with WHO recommendations
- Direct support to GOM for adoption of SCM in the public sector
- Funding for international NGOs (particularly PSI) to provide technical assistance and support adoption of SCM in the private sector, with focus on practical and sustainable mechanisms
- Support for development of pre-packaged treatment kits at affordable prices
- Development of an agency (Salama) to ensure effective dissemination of essential drugs to public and private sectors
- Practical, standardized training courses that have reached a substantial proportion of public and private providers.
- Support to GOM in developing national HIV/syphilis sentinel surveillance and additional studies assessing syphilis prevalence in the general population (e.g., DHS, 2003 survey) and behavioral and risk factor studies assessing HIV/STD transmission risks, areas of high transmission

It is hoped that this type of donor collaboration will continue on into new areas in the future. Some important areas are:

- Support to GOM in recognizing the great public health impact of STIs both in enhancing HIV risk and promoting congenital syphilis and other adverse pregnancy outcomes. Two points that should be consistently promoted to GOM are that (1) an HIV epidemic will thwart Madagascar’s efforts toward economic stability and poverty reduction; and (2) congenital syphilis is among the most affordable and easily prevented public health problems that exist today.

If possible, enlist the aid of special groups dealing with improving economics and poverty reduction (e.g., Consultative Group, Ambassadors and Diplomatic Community, UNDP) to increase awareness of the public health importance of STI and how it relates to poverty and about the new STI Strategic Plan.

- Support to GOM in integrating the existing STI/HIV program with ANC syphilis screening (responsibility currently resides in 2 separate parts of MOH). If a true integration of these activities into a single STI program proves impossible, it is hoped that donors can speak “with one voice” to ensure that the two groups work together closely for program planning, implementation, monitoring and evaluation to achieve their unified national goal of effective STI control.

- Continued support in monitoring STI control activities in the private as well as public sectors (e.g., PSI's strong existing program of clinical services and drug distribution should be supported)
- Financial support and promotion for antenatal syphilis screening for congenital syphilis elimination *whenever possible* and arrange to introduce antenatal screening into any existing (or planned) donor-supported programs, whether in public or private sectors. Some examples of programs that should include syphilis screening as part of their "package" are the new PMTCT programs (syphilis screening should be done with all HIV testing for PMTCT), Roll Back Malaria and other malaria control programs in pregnant women, and Safe Motherhood. In addition, other programs targeting pregnant women (e.g., nutrition, vaccine preventable disease, reproductive health, family planning) should be asked to include information on congenital syphilis elimination in all of their training programs/educational materials to providers. Similarly, donors should encourage consideration of root causes of high STI prevalence whenever possible (e.g., as part of programs addressing gender issues, education for women, human rights) and to include antenatal syphilis screening as part of a basic package for program support.
- It is extremely important that agencies whose missions focus on women and infants (e.g., UNICEF, WHO, reproductive health programs, family planning programs) are active participants in the STI Strategic Planning Working Group to ensure understanding and "buy in" of national STI control strategy.
- Continue to encourage effective drug distribution systems. The current system still does not allow effective distribution of critical STI drugs in the public sector. Interim evaluations of drug distribution are warranted but will need to be funded and supported.
- Identification of resources to support antimicrobial susceptibility studies, program evaluations, and laboratory systems development and quality control/quality assurance monitoring (e.g., ensuring the proper use of SCM drugs to understand antimicrobial susceptibility trends and adjust national algorithms accordingly).
- Provide funding and technical support for pilot studies or programs promoting STI control in important "bridging" populations for HIV, such as commercial sex workers and their clients, mobile men (e.g., truckers, sailors, and miners). Emphasis should be placed on high quality services with high coverage rates, with services located in high transmission areas ("hot spots").
- Encourage new business enterprises (e.g., new mining industries) to consider STI/HIV impact in their planning and to provide STI clinical services as well as HIV prevention services/education to their employees. Timing is critical given new investments planned in Fort Dauphin area, a region with among the highest syphilis rates in the country (and thus the world). Services of interest include general and specific educational campaigns, STI screening and clinical services, condom promotion and social marketing, promotion of voluntary HIV counseling and testing (VCT) and ensuring availability of HIV treatment if at all possible. Clinical and preventive services for sex workers to minimize STD/HIV should

also be developed, pilot tested and expanded to assure high coverage in these regions.

- Encourage delay of the 2006 PI6/PI7 study until systems are in place to address the problems identified by the Joint Consultation Team.
- After development of the National Strategic Plan, it would be useful for GOM and donors to continue routine meetings on STI/HIV, perhaps through development of a “Technical Working Group on STI.” SE/CNLS has taken the initiative of developing the Working Group and could perhaps chair such a technical group – with benefits of ensuring government participation. However, having a rotating Chairperson (e.g., moves every 6 months) also has some benefits of ensuring meeting agendas push appropriately.

Additional areas for collaboration will arise as the program matures.

The willingness and interest of various GOM departments, donors and NGOs to participate on the STI Working Group is a good example of the outstanding partner support in the past, and a very positive indication of continuing support in the future. If initiated early and diligently, this type of support can enable Madagascar to eliminate STI as a public health problem and help stave off any incipient outbreak of HIV.

#### ***Task 4: Propose an Effective, Sustainable Monitoring System for the STI Program***

It is probably premature to provide a monitoring system until the National Strategic Plan that outlines overarching goals and specific objectives has been developed. However, regardless of the plan a few general areas should be kept in mind:

- Any monitoring system for STI control must integrate STI case management with syphilis screening in antenatal women. Ideally, both of these programs (currently in two separate divisions) would be integrated into a single system. But at the very least a close working relationship between the MCH and STI control programs will need to be established.
- For antenatal syphilis screening, the critical indicator to monitor is “proportion of syphilis-infected mothers who receive effective treatment before 24 weeks gestation”. Indicators that simply measure proportion of antenatal women screened will be worse than ineffective, as they will suggest progress when none is made (see earlier discussion under *STI Clinical Services*). In addition, the national STI program should explore the possibility of developing 1-2 sentinel hospital sites that collect population-based data on still births (including RPR) as a means of measuring program impact.
- The STI program monitoring system should include monitoring availability of essential STI drugs at each level and should include indicators that explain where/at what level problems occur (e.g., Salama, DPL, Central government (DGLS and CNLS) and Provincial, District and local health facilities), and extent of expired essential STI drugs (should at least include ciprofloxacin) and pre-packaged STI kits (GeniCure and Cura7). Availability of essential drugs and commodities (syringes/needles, benzathine penicillin, condoms for STI control,

and reagents including VDRL or RPR, confirmatory treponemal tests, and needed laboratory equipment at appropriate levels) should also be monitored.

- The national STI program should include periodic monitoring of clinical services as part of routine supervision of primary health care clinics, including maternal and child health and family planning services.
  - Feasible strategies to monitor program quality should be explored, such as the proposed plan to assess service quality at 12 sites in each of six provinces. Other possibilities are use of “mystery clients” (currently be successfully used by PSI), periodic refresher training courses, or occasional clinic surveys. Meetings of DGLS and NGOs (e.g., PSI, SanteNet) could be useful in identifying strategies.
  - If possible, STI control it should also be monitored in private clinic settings (perhaps with NGO or donor agency support). The same types of systems measured in the public program should be attempted for private clinics (more detail below). Private clinic data should be kept and reported separately from public clinic data in national reporting.
- The national STI control program should carefully monitor its efforts on GUD, as this leads to the most serious public health consequences.
  - *GUD* is primarily caused by chancroid, syphilis or genital herpes infection, and has been associated with a 5 – 11 fold increased risk for HIV acquisition or transmission. GUD is the STI most likely to enhance spread of HIV in Madagascar. Chancroid and syphilis are both easily treated and cured. The bacteria causing syphilis, *Treponema pallidum*, is also the cause of congenital syphilis – the world’s most common cause of stillbirth and fetal loss. Congenital syphilis can be identified with antenatal syphilis screening and prevented (cured) with intramuscular penicillin, an inexpensive and widely available drug.
  - *Genital discharge* should be its second area of concern. Genital discharge has also been associated with increased risk for HIV, but not to the same extent as GUD. Organisms causing genital discharge are also the primary infectious agents causing infertility.
  - *Other syndromes* (e.g., vaginal discharge), while problematic for the individual, are of lesser public health consequence.
- The Monthly Activities Report should be updated to reflect the new STI control strategy. If possible, reporting of “genital ulcer disease” and “genital discharge” should be stratified by sex. (“Lumping” men and women together as is currently done is not very meaningful for following trends because they include a large and unknown proportion of women presenting with vaginal rather than cervical discharge).
- In addition, MCH/FP data on the Monthly Activities Report form should track the availability and use of RPR testing and successful treatment of pregnant women during the appropriate weeks of pregnancy and should include timing of treatment (e.g., on or before 24 weeks).
- Partner treatment is essential for STI control. This can and should be done by clinics even if this information is not reported on the Monthly Activities Report. Proportion of STI patients who are sex partners could be tracked at each health

facility (e.g., by a small notation in the clinic register). Reasons for this are that the Mwanza trial that successfully used SCM for HIV reduction reported that 30% of all STI patients treated were referred sex partners. This is a reasonable goal for Madagascar to promote for each of their CSBs.

- Annual and, if possible, bi-annual reports describing national and regional data should be developed, and should include discussion of important STI trends (including congenital syphilis and HIV). Reports should be provided up to leaders and down to regional and local levels to allow health authorities to efficiently use data to inform their programs. Provision of routine reports will likely require 1-2 additional technical staff.
- National surveillance should include periodic (e.g., every 3 to 5 years) SCM algorithm validation studies, including antimicrobial susceptibility studies and elicitation of the etiologies of GUD.
- GUD and genital discharge surveillance data are currently reported as a prevalence (which is desirable) but are titled “proportions” in the report. This should be changed to “prevalence” in the titles of these reports to avoid confusion. To calculate prevalence, technical personnel are currently using all population denominator data. More accurately, prevalence rate calculations should include only those at risk for STI (i.e., 15-50 year olds) in the denominators. Since a large proportion of Madagascar’s population is < 15 years, new prevalence rates calculations with the more accurate denominators will likely yield startling increases in STI rates. These are important data for leaders to understand the extent of the STI problem. In the future, if sex-specific data on GUD and genital discharge is available, denominators used in prevalence calculations should also be sex specific and include only 15-50 year old men or women.

#### ***Task 5: Propose Recommendations***

##### ***For the Government of Madagascar***

The members of the Joint Consultation Team identified numerous areas of interest for the national STI control program but were nonetheless in consensus in recommending that the National Strategic Plan focus on three broad areas. These were presented and discussed in a Mini-workshop called by CNLS at the end of the consultation (Attachment G) and were also presented and discussed with the Executive Secretary of the SE/CNLS in a separate meeting (Attachment H):

(1) *Advocacy/Leadership for STI Control at the highest level of government.* Strong leadership provides provincial leaders a goal on which to focus their efforts, national training programs (e.g., medical and nursing schools) an educational plan, and the general public the important information needed about STI/HIV risk and adverse pregnancy outcomes. Leadership and advocacy can also help encourage key others (public health leaders, health providers, educators, and the media) to better educate the general public about STI (and especially GUD and syphilis) as an important public health problem.

(2) *Strengthen national STI control, with special emphasis on controlling and preventing genital ulcer disease (GUD) and congenital syphilis.* GUD control should include

promotion of universal syphilis screening in antenatal women as well as improved STI clinical services. While many STIs have public health consequences, GUD has the most important potential consequences in terms of HIV transmission and adverse pregnancy outcomes. Madagascar has already made great strides toward national STI control through promotion of a national SCM algorithm in public and private sectors. However, to truly control GUD additional steps must be taken, including:

- Ensuring availability of effective, affordable drugs
- Strengthening the existing STI program in Central government and integrating antenatal syphilis screening into that program
- Developing a supportive laboratory infrastructure for at least syphilis testing (and perhaps later an STI reference laboratory)
- Ensuring high quality clinical case management (both for adults and pregnant women) through routine, periodic quality assurance monitoring. Such monitoring should focus on the *critical* issues such as accurate use of SCM algorithms, provision of effective drugs and promotion of DOT, provision of condom skills and condoms, and effective partner treatment.

*(3) Targeted interventions for populations/settings with high STI/HIV transmission.*

Given the nation's currently concentrated HIV epidemic that is only now spreading to the general population, time still exists to avert a larger epidemic by reducing transmission in high prevalence populations. Special emphasis should be put into prevention programs for commercial sex workers and their clients, mobile men (truckers, sailors, miners) and other people with high STI/HIV. Interventions should have high coverage to ensure population impact. Encouraging public-private partnerships may be an effective mechanism to strengthen STI prevention and control for many high risk groups.

If accepted, the new strategic plan would ideally develop a national goal for each of these focus areas. Once goals are established, specific objectives should be developed that help GOM reach their national goals. Preferably, objectives should be "SMART" (i.e., specific, measurable, attainable, results-focused, and time-phased). Indicators should measure progress in reaching specific objectives, be feasible to collect and as simple as possible.

